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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,438	04/10/2001	Zhen Liu	YOR920010031US1	3807

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EXAMINER	
JABR, FADEY S	

ART UNIT	PAPER NUMBER
3639	

DATE MAILED: 10/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/832,438	LIU ET AL.	
	Examiner	Art Unit	
	Fadey S. Jabr	3639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 April 2001*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-15,17-29 and 31-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-15,17-29 and 31-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Applicant has previously canceled claims **2, 16 and 30**. Thus, claims **1, 3-15, 17-29, 31-42** remain pending and are again presented for examination.

Response to Arguments

2. Applicant's arguments with respect to claims **1, 15, and 29** have been considered but are moot in view of the new ground(s) of rejection.

3. Applicant's arguments filed 10 April 2001 have been fully considered but they are not persuasive.

4. Applicant argues (with respect to claims 8, 22 and 36) that Smith does not teach modeling the resource allocation as a queuing network; decomposing the queuing network into separate queuing systems; and summing cost calculations for each of the separate queuing systems. Examiner notes that Smith does disclose modeling the system as a queuing network where customers are queued until another server is brought online (Para. 40 and 53). Examiner submits, however, that the rejection is based on a combination of the references to Smith and Pappalardo wherein Pappalardo discloses summing profits and penalties of each of the queuing systems (Lines 28-32).

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims **1, 3-15, 17-29, 31-42** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per **Claims 1, 3-15, 17-29, 31-42**, these claims recite a series of steps and are considered for the purpose of analysis un 35 U.S.C. 101 as reciting a series of steps. The claims do not recite an pre- or post-computer activity but merely perform a series of steps of selecting, storing, generating and transmitting data such as source code numbers, randomly generated numbers and very long decoded numbers, and is directed to non-statutory subject matter. A process is statutory if it requires physical acts to be performed outside of the computer independent of and following the steps performed by a programmed computer, where those acts involve the manipulation of tangible physical objects and result in the object having a different physical attribute or structure (*Diamond v. Diehr*, 450 U.S. at 187, 209 USPQ at 8). Further, the claims merely manipulate an abstract idea (selecting, storing, generating and transmitting data) or perform a purely mathematical algorithm without limitation to any practical application. A process which merely manipulates an abstract idea or performs a purely mathematical algorithm is non-statutory despite the fact that it might have some inherent usefuleness (*Sakar*, 558 F.2d at 1335,200 USPQ at 139).

Furthermore, in determining whether the claimed subject matter is statutory under 35 U.S.C. 101, a practical application test should be conducted to determine whether a "useful, concrete and tangible result" is accomplished. See *AT&T Corp. v. Excel Communications, Inc.*,

172 F.3d 1352, 1359-60, 50 USPQ2d 1447, 1452-53 (Fed. Cir. 1999); *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373, 47 USPQ2d 1596, 1600 (Fed. Cir. 1998).

An invention, which is eligible or patenting under 35 U.S.C. 101, is in the "useful arts" when it is a machine, manufacture, process or composition of matter, which produces a concrete, tangible, and useful result. The fundamental test for patent eligibility is thus to determine whether the claimed invention produces a "use, concrete and tangible result". The test for practical application as applied by the examiner involves the determination of the following factors"

(a) "Useful" – The Supreme Court in *Diamond v. Diehr* requires that the examiner look at the claimed invention as a whole and compare any asserted utility with the claimed invention to determine whether the asserted utility is accomplished. Applying utility case law the examiner will note that:

i. the utility need not be expressly recited in the claims, rather it may be inferred.

ii. if the utility is not asserted in the written description, then it must be well established.

(b) "Tangible" – Applying *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994), the examiner will determine whether there is simply a mathematical construct claimed, such as a disembodied data structure and method of making it. If so, the claim involves no more than a manipulation of an abstract idea and therefore, is nonstatutory under 35 U.S.C. 101. In *Warmerdam* the abstract idea of a data structure became capable

of producing a useful result when it was fixed in a tangible medium, which enabled its functionality to be realized.

(c) "Concrete" – Another consideration is whether the invention produces a "concrete" result. Usually, this question arises when a result cannot be assured. An appropriate rejection under 35 U.S.C. 101 should be accompanied by a lack of enablement rejection, because the invention cannot operate as intended without undue experimentation.

The claims, as currently recited, appear to be directed to nothing more than a series of steps including calculating and subtracting data which nothing more than manipulating numbers without any useful, concrete and tangible result and are therefore deemed to be non-statutory. While these numbers may be concrete and/or tangible, there does not appear to be any useful result.

Furthermore, it is noted that there is no interrelationship between the independent claim preamble and the body of the claim. For instance, claim 1 preamble recites: "A method in a data processing system of allocating resources of a computing system to hosting of a data network site to thereby maximize generated profit:; but the claim steps of calculating and subtracting data fail to accomplish the result/application of actually maximizing profit.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims **1, 3-15, 17-29, 31-42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith, Pub. No. US2002/0091854 A1 in view of Pappalardo, "ISPs continue to improve Internet access SLAs", hereinafter referred to as Pappalardo.

As per **Claims 1, 3, 15, 17, 29 and 31**, Smith discloses method of allocating resources of a computing system to hosting of a data network site to thereby maximize generated profit, comprising:

- calculating a total profit for processing requests received by the computing system for the data network site based on at least one service level agreement (Pars. 13-16); and
- allocating resources of the computing system to maximize the total profit.

Nonetheless, Smith fails to disclose a method wherein calculating a total profit includes, for each request received by the computing system for the data network site, determining whether processing of the request generates a revenue or a penalty, wherein a revenue is generated when an allocation of resources is such that the request is processed in accordance with the service level agreement and a penalty is generated when the allocation of resources is such that the request is not processed in accordance with the service level agreement, and wherein the total profit is obtained by subtracting the penalty from the revenue for each request.

However, Pappalardo teaches generating revenue by charging the customer a fee for processing the request according to the service level agreement and generating a penalty when the request is not processed according to the service level agreement (Lines 28-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the method of Smith and include generating revenue by determining if the processing of the request

generates a profit or a penalty based on the service level agreement as taught by Pappalardo because penalizing the service provider when the request is not processed according to the SLA will greatly improve the service provider's ability to supply enhanced performance therefore generating greater profits.

As per **Claims 4, 18 and 32**, Smith further discloses a method wherein the requests are classified into one or more classes of requests and each class of request has a corresponding service level agreement from the at least one service level agreement (Para. 63, 66).

As per **Claims 5, 19 and 33**, Smith further discloses a method wherein allocating resources includes determining an optimal traffic assignment for routing requests to thereby maximize the total profit (See Claim 1).

As per **Claims 6, 20 and 34**, Smith further discloses a method wherein the computing system is a web server farm and wherein the resources are servers of the web server farm, wherein each server of the web server farm accommodates a different set of classes of requests (Para. 34, 63; and See Claim 11).

As per **Claims 7, 21, and 35**, Smith further discloses a method further comprising determining an optimum resource allocation to maximize the total profit (See Claim 1).

As per **Claims 8, 22 and 36**, Smith discloses a method wherein determining an optimum resource allocation includes:

- modeling the resource allocation as a queuing network;
- decomposing the queuing network into separate queuing systems; and
- summing cost calculations for each of the separate queuing systems

(Para. 13, 13, 40, and 53).

Nonetheless, Smith fails to disclose wherein summing cost calculations includes summing profits and penalties of each of the separate queuing systems. However, Pappalardo teaches summing profits and penalties of each of the systems (Lines 28-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the method of Smith and include determining the costs by calculating the profits and penalties of each of the systems as taught by Pappalardo because penalizing the service provider can greatly improve service and therefore reduce costs.

As per **Claims 9, 23 and 37**, Smith further discloses a method further comprising optimizing the summed cost calculations to maximize generated profit and thereby determine an optimum resource allocation (Para. 13-16, See Claim 1).

As per **Claims 10, 24 and 38**, Smith further discloses a method wherein allocating resources includes determining an optimum traffic assignment and an optimum generalized processor sharing coefficient for a class of requests (Para. 66).

As per **Claims 11, 25 and 39**, Smith further discloses a method wherein allocating resources includes optimizing a cost function associated with a class of requests (Para. 16).

As per **Claims 12, 26 and 40**, Smith further discloses a method wherein optimizing the cost function includes modeling the optimization as a network flow from a source, through sink representing sites/classes of requests and servers/classes of requests, to a supersink (Para. 16, 66).

As per **Claims 13, 27 and 41**, Smith further discloses a method decomposing the queuing network into separate queuing systems includes decomposing the queuing network into decomposed models for each class in a hierarchical manner (Para. 63, 66).

As per **Claims 14, 28 and 42**, Smith further discloses a method wherein a decomposed model for class K is based on a decomposed model of classes 1 through k-1 (Para. 16, 63-66).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Examiner's Note: Examiner has cited particular columns and line numbers in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that the applicant, in preparing the responses, fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fadey S. Jabr whose telephone number is (571) 272-1516. The examiner can normally be reached on Mon. - Fri. 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hayes can be reached on (571) 272-6708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fadey S Jabr
Examiner
Art Unit 3639

FSJ

JOHN W. HAYES
SUPERVISORY PATENT EXAMINER